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February 27, 2012

FILED/ACCEPTED

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Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

FEB 2 7 2012

Federal Communications Commission
Office of the Secretary

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***EX PARTE* NOTICE**

Re: **REDACTED - FOR PUBLIC INSPECTION**
Connect America Fund, WC Docket 10-90; *A National Broadband Plan for Our Future*, GN Docket 09-51; *Establishing Just and Reasonable Rates for Local Exchange Carriers*, WC Docket 07-135; *High-Cost Universal Service Support*, WC Docket 05-337; *Developing an Unified Intercarrier Compensation Regime*, CC Docket 01-92.

Dear Ms. Dortch:

CenturyLink has submitted confidential information into the record under seal in the above-referenced proceeding pursuant to the Protective Order entered September 16, 2010. In accordance with the Protective Order, CenturyLink hereby submits a redacted version of the filing for the public record.

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Jeffrey S Lanning

February 27, 2012

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Re: *Connect America Fund*, WC Docket 10-90; *A National Broadband Plan for Our Future*,
      GN Docket 09-51; *Establishing Just and Reasonable Rates for Local Exchange Carriers*,
      WC Docket 07-135; *High-Cost Universal Service Support*, WC Docket 05-337;
      Developing an Unified Intercarrier Compensation Regime, CC Docket 01-92.

Dear Ms. Dortch:

On February 23, 2012 Melissa Newman, Curt Frankenfeld, and I, on behalf of
CenturyLink, met with Sharon Gillett, Steve Rosenberg, Patrick Halley, Trent Harkrader, Amy
Bender, and Joe Cavender of the Wireline Competition Bureau. We discussed the Connect
America Fund Phase One Incremental Support adopted by the Commission in the above-
captioned dockets. Specifically, we discussed CenturyLink's potential build-out plan with
respect to construction supported by CAF Phase I incremental support. The discussion was
based on the attached presentation.

Pursuant to Section 1.1206(b) of the Commission's rules, a copy of this notice is being
filed in the above-referenced dockets. Please contact me if you have any questions.

Sincerely,

Jeffrey S Lanning

cc: Sharon Gillett, Steve Rosenberg, Patrick Halley, Trent Harkrader, Amy Bender, and Joe
      Cavender

CAF Phase I Incremental Support Build-Out Plan
February 23, 2012

Identifying Locations

Unserved Locations

- Started with locations in NTIA unserved census blocks (CBs)
  - Identified only ███████, buildable locations
- Incrementally looked at additional unserved locations:
  - Added locations in CBs listed as served only by fixed wireless
  - Added locations in CBs partially served by CTL (with no other wire line provider)
- Analysis in detail in legacy Qwest locations; extrapolation to legacy CTL

Conclusion

- By adding locations in CBs partially served by CTL and/or served by fixed wireless, the build plan indicates that qualifying broadband can be deployed to ███████ ██████ unserved locations for ███████

Discussion

- CenturyLink technology and planning methodology
- Costing approach
- Value of the technology approach

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Technology Proposed and Costing

Used a combination of Fiber to the Node (FTTN) and fiber-fed Broadband Digital Loop Carrier (BBDLC) technology approaches

- FTTN is placement of DSLAM at existing serving area interface (x-box)
- BBDLC places DLC with combo cards to reach more households
- Fiber penetration to this level allows higher bandwidth products to a significant part of service area
- Same technology approach as used today used throughout CenturyLink to unify technology application, control operations costs, and attain best equipment costs

Costing

- Model based on existing infrastructure:
  - Existing structure (conduit, duct, inter-duct)
  - Serving area interfaces (x-boxes)
  - Fiber cable
- Uses average build costs:
  - Structure and fiber placement costs per foot
  - X-box augments
  - DSLAM site costs (DSLAM, pedestal/cabinet, connecting cables, power, etc.)
  - BBDLC costs (DLC, cards, pad, connecting cables, power, etc.)
  - CO/shared costs (Ethernet switch, transport, internet access, etc.)

Quantitative data is more readily available in Legacy Qwest service area. Most examples are drawn from this information.

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Current RT VDSL2 DSLAM Deployment

Trunk 1-4 GE

Subtend 0-3 Clients 1-2.5*GE each

TA1148V Host

TA1148V Client
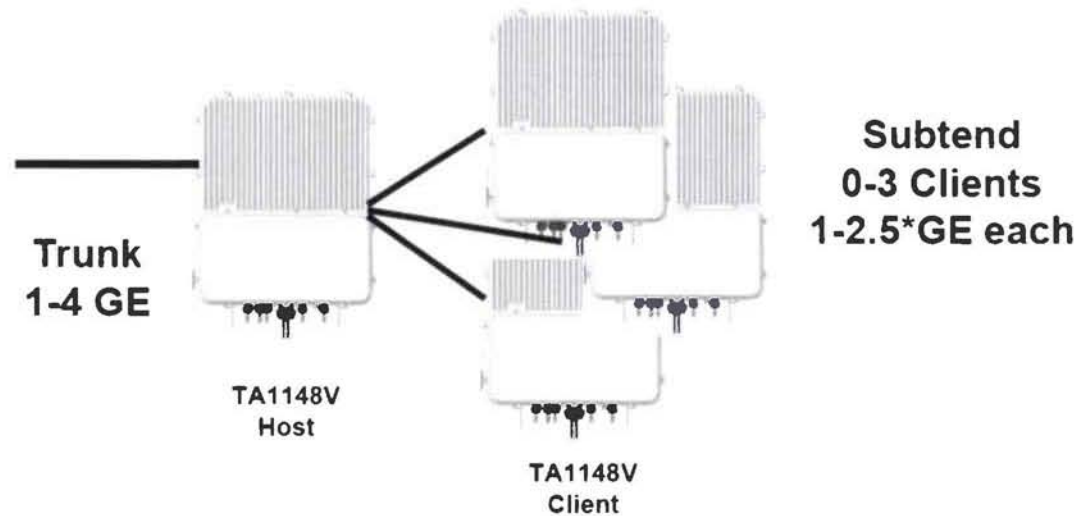
Trunk	BW / Port (192 Ports)	Comment
1 GE	5M	Initial Installation
2 GE	10M	Sufficient for 2-4 year expected growth
4 GE	20M	Capable of supporting high, simultaneous use found in gaming, over-the-top video, etc.

This is current standard FTTN equipment in in wide use today. BBDLC applications with have similar flexibility to support VDSL2 and ADSL2+ as necessary to meet the needs of our customers.
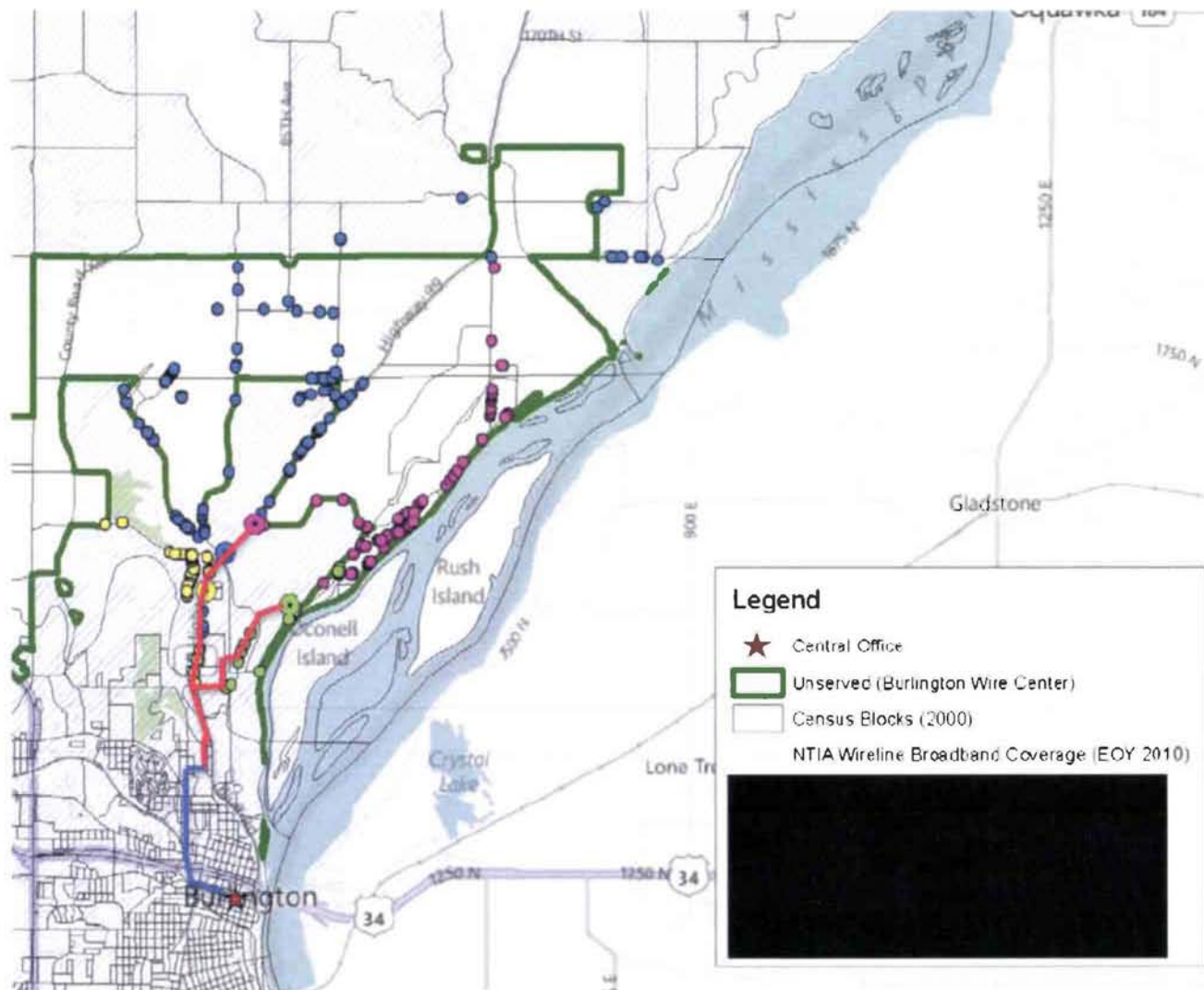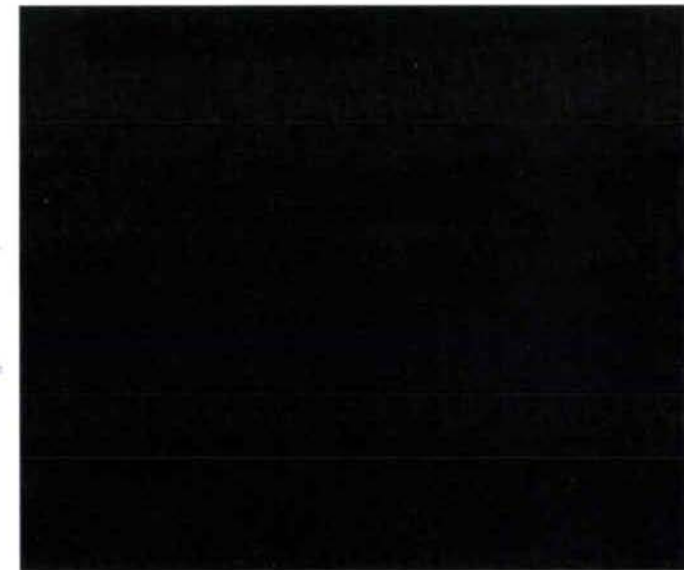
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FTTN Network Architecture
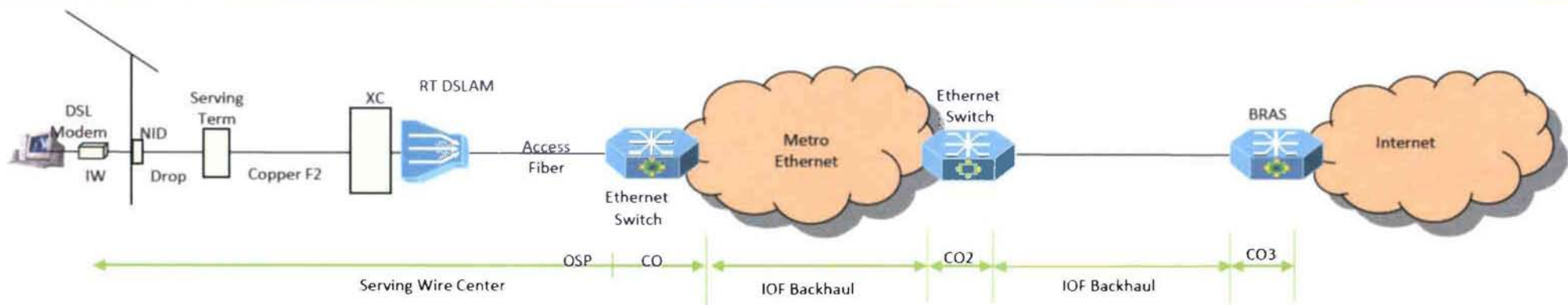
- **BRAS – Broadband Remote Access Server (** ▮▮▮▮ **of total cost)**
  - BRAS cost. Switches placed at LATA level. One switch per ▮▮ Subs. Allocated to ▮▮ customer take rate.
  - Aggregates the circuits from one or more link access devices such as DSLAMs. Provides Layer 2 connectivity through either transparent bridging or PPP sessions over Ethernet. Enforces quality of service (QoS) policies. Provides Layer 3 connectivity and routes IP traffic through an ISP's backbone network to the internet
- **Core MOE (** ▮▮▮▮ **of total cost)**
  - Core MOE is priced on a cost per subscriber basis. Allocated to ▮▮ customer take rate.
- **MOE – Metro Optical Ethernet (** ▮▮▮▮ **of total cost)**
  - Most offices have existing equipment would only receive costs of additional cards at a per-port cost.
  - Aggregates GigEs that are feeding the DSLAMs
- **IOF Backhaul (** ▮▮▮▮ **of total cost)**
  - ROADM (Reconfigurable Optical Add Drop Multiplexer) - placed in each Central office. All equipment was priced using configuration costs and comparing to actual jobs. Allocated to portion of capacity used.
  - IOF Fiber placed where necessary – Checked for 8 spare fibers.
- **RT DSLAM (** ▮▮▮▮ **of total cost)**
  - DSLAM placed at each XC on build list. All equipment was priced using corporate average costs that have been compared to actual jobs. Equipped all DSLAMs for estimated Subs. Placing DSLAM in Coolped at all sites with new Local Power and R.O.W. costs.
  - Collects data traffic from multiple subscribers into a centralized point so that it can be transported to a switch over Ethernet connection
- **Access Fiber (** ▮▮▮▮ **of total cost)**
  - Feeder Fiber - PT (Fiber Modeling Tool) models 12 Fibers per site. Calculates the incremental fiber cost over current growth needs.
  - Fiber Lateral is the section of fiber between the Feeder and the DSLAM.

BBDLC architecture is similar. More than one serving area is included in these applications rather than the single interface for FTTN.
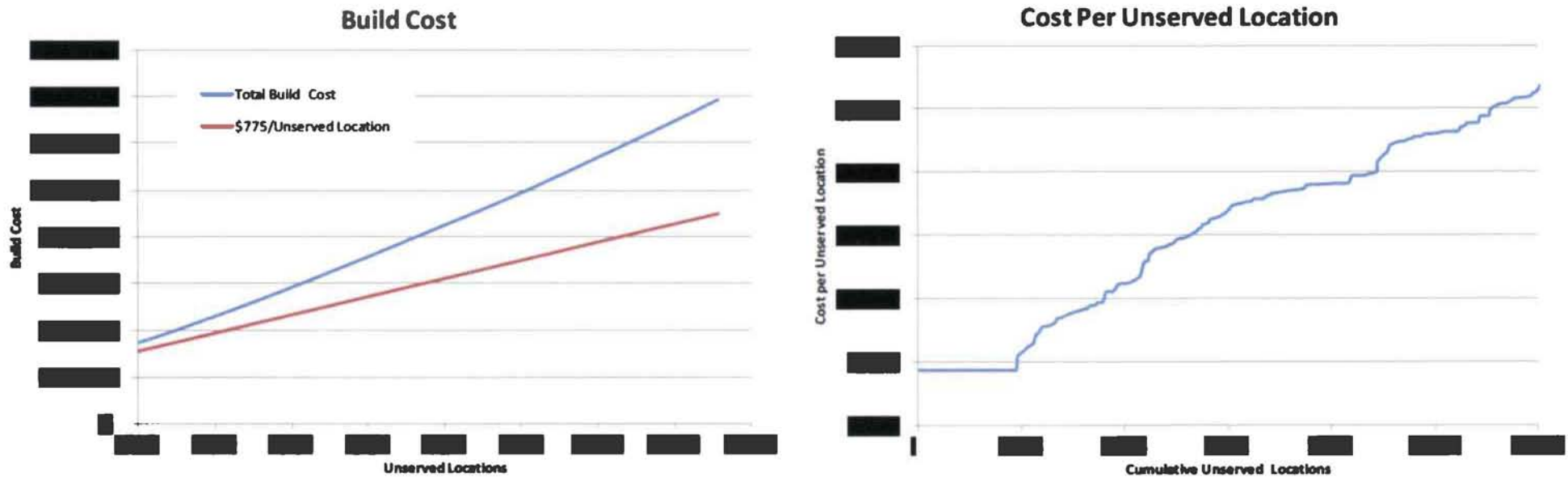
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Connect America Fund Example 1

- Showing build plan as opposed to generalized model.
- Burlington, Iowa – ███████████ ██████████ in proposed build.
- NTIA unserved census block
- Feeder Fiber Planned Cost

Legend

★ Central Office

▭ Unserved (Burlington Wire Center)

▯ Census Blocks (2000)

NTIA Wireline Broadband Coverage (EOY 2010)

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Cost per Location, Total Cost, and Coverage

Build Cost

Total Build Cost
$775/Unserved Location

Unserved Locations

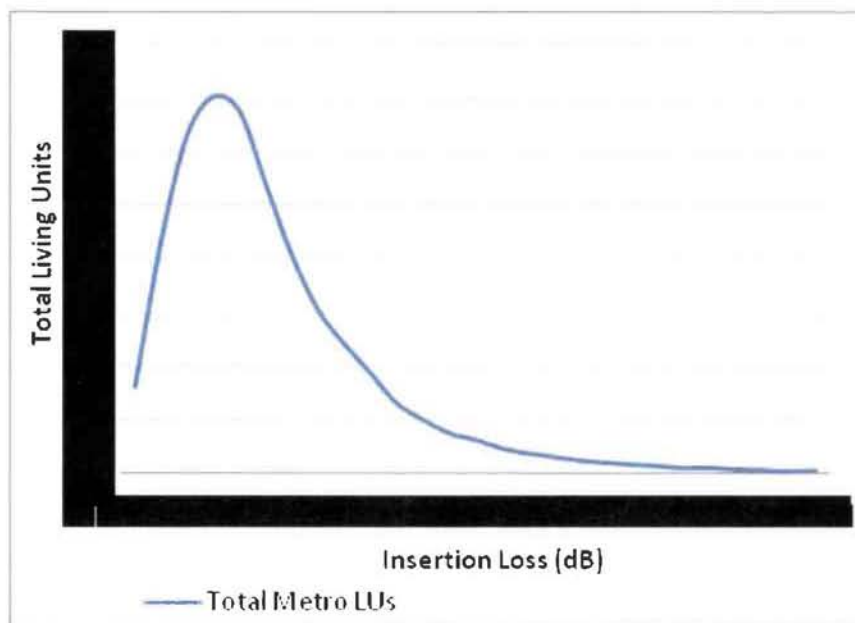**Cost Per Unserved Location**

Cumulative Unserved Locations

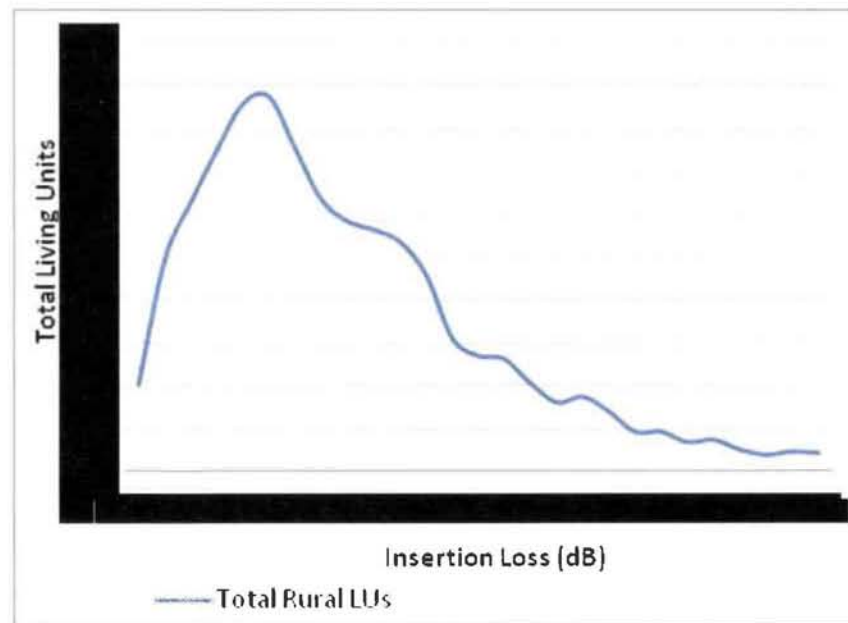## Build costs are exceeding modeled cost:

- Increased costs to implement in-cable plant using existing interfaces to access unserved locations.

- Build Plans are done at route-level to make most use of existing and built structure and fiber, and provide higher-quality service and upgrade path.

- The cost per unserved location increases substantially after easier sites are built.

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Average Product Availability – VDSL2 RT DSLAMs

Metro FTTN Areas

Total Living Units

Insertion Loss (dB)

——— Total Metro LUs

Rural Areas

Total Living Units

Insertion Loss (dB)

——— Total Rural LUs

Average loop lengths are longer in rural areas. Placing DSLAMs at existing serving interfaces will support ▉ of the households with ▉ service and about ▉ with ▉ service when VDSL2 is used. ▉ upstream service would be available to ▉ of the households. These are cumulative statistics over existing RTs. VDSL2 and ADSL2+ have similar reach beyond 12M product limits.

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